Remarks

Reconsideration of the application and allowance of all pending claims are respectfully requested. Claims 1-52 remain pending.

In the final Office Action, claims 1, 5, 8, 10-13, 15, 18, 22, 25, 27-30, 32, 40, 43, 45-48, and 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (U.S. Patent No. 4,503,535; hereinafter, "Budde") in view of Fischer et al. (U.S. Patent No. 5,001,472; hereinafter, "Fischer"); claims 2, 3, 7, 19, 20, 24, 35-38 and 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer and further in view of Brown et al. (U.S. Patent No. 4,860,284; hereinafter, "Brown"); and claims 4, 6, 9, 14, 16, 17, 21, 23, 26, 31, 34, 35, 39, 41, 44, 49, 51 and 52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer, Brown, and further in view of Moiin et al. (U.S. Patent No. 6,192,483; hereinafter, "Moiin"). Applicants respectfully, but most strenuously, traverse these rejections for the reasons set forth below.

Initially, applicants respectfully traverse the Budde-Fischer combination set forth in the final Office Action. Absent from the Office Action is any express teaching, suggestion or incentive identified in the art for making the combination. The only justification provided for combining Budde and Fischer is that it would allegedly increase the efficiency of the network by reducing the dependency of the nodes on each other (see final Office Action, paragraph 2). Applicants respectfully submit that this justification does not identify a sufficient teaching, suggestion or incentive in the art itself to combine these references. Applicants' invention does not describe using the network in a more efficient way. Rather, the present invention discloses a reconfiguration technique that avoids requiring tight synchronization among the nodes of the network. Since applicants' invention is silent as to network efficiency, increasing the efficiency of the network is not a proper justification for combining Budde and Fischer. Thus, applicants respectfully submit that the combination of Budde and Fischer is improper.

PO9-99-067   -2-

Assuming, arguendo, that the Budde-Fischer combination is proper, the combination still fails to teach or suggest features of the present invention. In one aspect, applicants' invention is directed to reconfiguring a network to reflect a change in the topology of the network by utilizing a predetermined length quiescent state. In one example, this predetermined period of time is sufficient to allow the transmission of reconfiguration requests from one node to other nodes of the network, thereby causing the other nodes to also enter quiescent states.

As one particular example, applicants claim, in independent claim 1, a method of reconfiguring a network having a plurality of nodes to reflect a change in topology of the network. The method includes, for instance, upon receiving a reconfiguration request at one node of the plurality of nodes, entering a quiescent state at the node, wherein the one node remains in the quiescent state for a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to also enter a quiescent state; and upon termination of the quiescent state at the one node, reconfiguring the one node to reflect the change in topology of the network without checking with the at least one other node.

In applicants' claimed invention, a quiescent state is used in the reconfiguring of a network. This quiescent state is entered by a node, upon receiving a reconfiguration request at the node. The node stays in the quiescent state for a period of time sufficient to allow at least one other node to also enter a quiescent state. Upon termination of the quiescent state of the node, the node is reconfigured to reflect a change in topology of the network without checking with the at least one other node. This is very different from the teachings of Budde and Fischer, either alone or combination.

An "obviousness" determination requires an evaluation of whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art. In evaluating claimed subject matter as a whole, the Federal Circuit has expressly mandated that functional claim language be considered in evaluating a claim

PO9-99-067

-3-

relative to the prior art. Applicants respectfully submit that the application of the standards to the independent claims presented herewith leads to the conclusion that the recited subject matter would not have been obvious to one of ordinary skill in the art based on the teachings of Budde and Fischer.

Initially, applicants note that both Budde and Fischer fail to disclose reconfiguring a node upon termination of a quiescent state, which is claimed in the present invention (e.g., claim 1). This deficiency is expressly admitted in the final Office Action at page 5, lines 3-4. Since neither Budde nor Fischer describe this aspect of the present invention, applicants respectfully submit that the combination of Budde and Fischer does not render applicants' independent claims obvious.

Applicants believe that the admission cited above at least renders incomplete the rejection based on the Budde-Fischer combination and raises doubts concerning the necessity for further argument regarding this combination. However, applicants provide additional remarks relative to Budde and Fischer as set forth below.

Budde recites a technique for detection, reporting and recovery from errors in a multiprocessing system. Prior to error recovery in Budde, an error-reporting cycle is performed during which all nodes receive an error report (see column 14, lines 8-11). The error-reporting cycle ends with all nodes synchronized, "entering recovery in lock step" (column 14, line 63). After all the nodes receive the error reports, the system enters a timeout delay period, during which the system is quiescent. The timeout period allows transient noise to subside (column 13, lines 36-41; column 14, lines 8-17). Although Budde teaches a quiescent period, it does not teach or suggest a node remaining in a quiescent state for a sufficient period of time to allow at least one other node to enter the quiescent state, as claimed by applicants (e.g., claim 1). Since all nodes in Budde reach the quiescent state in unison, there is no reason to have a node stay in a quiescent state for a period of time sufficient to allow the other nodes to enter a quiescent state. Thus, Budde fails to teach or suggest this aspect of applicants' invention.

PO9-99-067

-4-

In the final Office Action, the Examiner responded to applicants' argument that Budde does not teach or suggest a node staying in a quiescent state for a period of time sufficient to allow at least one other node to enter a quiescent state by stating that "quiescent state is a very broad word" and that "waiting period" in Budde can be interpreted as "quiescent state." The Examiner also provided a dictionary definition of "quiescent." Applicants respectfully submit that the argument stated above does not depend on whether Budde describes a period of time in which a system is quiescent. Nor does the argument depend upon the definition or breadth of the term "quiescent state." Instead, the argument emphasizes a claimed feature of the predetermined time period of the quiescent state, i.e., its sufficiency for allowing at least one other node to enter a quiescent state. Again, this functional aspect of applicants' invention is not described or suggested by Budde.

Further, Budde fails to teach or suggest applicants' claimed element of upon termination of the quiescent state, reconfiguring the node to reflect the change in topology of the network without checking with the at least one other node (e.g., claim 1). Applicants note that it is explicitly admitted in paragraph 2 of the final Office Action that Budde fails to disclose this element.

For the above reasons, applicants respectfully submit that Budde fails to teach or suggest various aspects of applicants' claimed invention.

Fischer fails to overcome the deficiencies of Budde as applied against applicants' claimed invention. Fischer is directed to a token distribution technique that does not require an even distribution of tokens. In Fischer, reconfiguration occurs when a resource interface module (RIM) fails to sense activity for a predetermined time on a node to which a token has been passed. Thus, when inactivity is sensed, reconfiguration is performed (column 11, lines 13-25). This is very different from applicants' claimed invention. In applicants' claimed invention, reconfiguring occurs upon termination of the

quiescent state at the node that received the reconfiguration request (e.g., claim 1). In other words, reconfiguration takes place after an inactive state has ended. In contrast, reconfiguration in Fischer takes place when an inactive state is continuing for a predetermined period of time. The final Office Action stated that reconfiguration in Fischer takes place "when the node fails to sense activity" (page 9, paragraph 21, item 3). Applicants respectfully submit that failing to sense activity is equivalent to sensing inactivity, and thus, the Office Action at least implicitly admits to the contrast between Fischer and applicants' invention, as stated above.

Moreover, as used in Fischer, inactivity is a very different concept from a quiescent state in applicants' claimed invention. For example, an inactive node in Fischer is one that is not functioning, while a node that is in a quiescent state, as claimed by applicants, is a functioning node that is, for instance, waiting for activity in other portions of the system to terminate.

Although there is discussion of inactivity in Fischer, there is no discussion, teaching or suggestion in Fischer of utilizing a quiescent state in reconfiguring a network. That is, Fischer is silent as to a quiescent state used in reconfiguring. For instance, Fischer fails to teach or suggest applicants' claimed element of upon receiving a reconfiguration request at one node of a plurality of nodes, entering a quiescent state at the one node. There is no description in Fischer of entering a quiescent state, upon receiving a reconfiguration request. Instead, in Fischer, reconfiguration is performed when the RIM has not received a token for a predetermined time period. That is, in Fischer, first inactivity is detected, then reconfiguration action is taken, as opposed to the node receiving a reconfiguration request and then going into a quiescent state.

Further, there is no discussion, teaching or suggestion in Fischer (nor in Budde) of a node remaining in the quiescent state for a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to also enter a quiescent state. This aspect of the claimed invention is simply missing from Fischer.

PO9-99-067   -6-

Yet further, there is no discussion, teaching or suggestion in Fischer of reconfiguring a node to reflect the change in topology, upon termination of the quiescent state. In Fischer, reconfiguring is performed upon detection of inactivity, not upon termination of a quiescent state, as claimed by applicants' invention.

Moreover, Fischer includes no description or suggestion of reconfiguring a node to reflect a change in topology of the network without checking with at least one other node. Fischer instead explicitly describes reconfiguration as including one node checking with another node to obtain the ID of the next node in the sequence (column 11, lines 1-29).

The final Office Action stated that the timeout period in Fischer can be interpreted as a quiescent state. Again, applicants respectfully submit that various interpretations of quiescent state are not at issue. Applicants instead respectfully submit that certain functional aspects of how the quiescent state is used distinguish it from Fischer's timeout period. For example, the timeout period in Fischer is used to detect a failure, while the quiescent state of the claimed invention is used to wait for activity to end at one or more nodes of the system.

Applicants respectfully submit that a careful reading of Fischer, and in particular, Column 11, lines 1-29 (cited in the final Office Action), fails to teach or suggest various features of applicants' claimed invention. Again, there is no teaching or suggestion of entering a quiescent state upon receiving a reconfiguration request at a node, of reconfiguring the node upon termination of the quiescent state, nor of reconfiguring the node without checking with the other nodes, as claimed by applicants.

Since both Fischer and Budde fail to teach or suggest multiple aspects of applicants' claimed invention, applicants respectfully submit that the combination of Budde and Fischer also fails to teach or suggest applicants' claimed invention. Thus,

applicants respectfully request an indication of allowability for claim 1 and independent claim 18.

The other independent claims (i.e., claims 35 & 36) are believed patentable for the same reasons as those noted above in connection with claims 1 & 18. These claims were rejected based upon obviousness in further view of the patent to Brown.

Brown does not overcome the deficiencies of Budde and Fischer when applied against applicants' claimed invention. For example, Brown fails to describe or suggest use of a quiescent state in reconfiguring. A careful reading of Brown indicates that reconfiguring takes place after identifying that a token signal was lost. The loss of the token signal is identified after expiration of a timer. In contrast to applicants' claimed invention, there is no discussion of a quiescent state or of using the quiescent state in reconfiguring. In the final Office Action, the Examiner stated that Brown uses a time out instead of a quiescent state, and that the word quiescent is very broad and can be interpreted in many ways. In response, applicants respectfully submit that applicants' use of the quiescent state differs from Brown's use of a timeout period. For example, applicants' quiescent state is used to wait for activity to end while Brown's timeout is used to detect when a token has been lost. For the above reasons, applicants respectfully submit that the independent claims remain patentable over the combination of Budde, Fischer and Brown.

The dependent claims are believed patentable for the same reasons as their respective independent claims, as well as for their own additional characterizations. For example, claim 2 recites, in part, that the predetermined period of time includes an amount of time sufficient to transmit a reconfiguration request from the one node to the at least one other node, wherein receiving the reconfiguration request causes the at least one other node to also enter a quiescent state. The final Office Action cited Brown (FIG. 1, element 18; column 6, lines 65-67; and column 7, lines 1-15) as teaching this aspect of

PO9-99-067   -8-

applicants' invention. Applicants respectfully submit that a careful reading of Brown and, in particular, the sections referenced above disclose no predetermined period or quiescent state, let alone use of such a state as claimed by applicants. In claim 3, applicants recite that the predetermined time is sufficient for completing execution of currently running protocols on the network. The final Office Action referenced column 11, lines 30-35 of Fischer as teaching this aspect. Applicants submit, however, that this reference to Fischer teaches a predetermined time within which all nodes must receive a token. It does not teach a time period sufficient for completion of protocols currently running on the network, as claimed by applicants.

Claim 5 recites, in part, an amount of time sufficient for a network protocol to perform a predetermined number of retries plus a predetermined amount of time between each retry. The final Office Action cited Budde as teaching this aspect of the claimed invention at column 15, lines 50-67. Although Budde does disclose retries, applicants note that Budde reveals no teaching or suggestion of a predetermined number of retries within a predetermined amount of time. Claim 8 recites, in part, a grace period that includes a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to exit a quiescent state. The final Office Action cited Fischer (column 11, lines 1-29) as teaching this feature. However, applicants respectfully submit that such a grace period is not mentioned, suggested or implied by Fischer.

Claim 13 recites, in part, transmitting, upon entering the quiescent state, a reconfiguration request from the one node to the at least one other node, wherein receipt of the reconfiguration request causes the at least one other node to enter a quiescent state. Although the Office Action cites column 18, lines 27-35 of Budde as teaching this particular aspect, applicants submit that a careful reading of Budde reveals no teaching or suggestion of such a reconfiguration request transmission. Additionally, applicants' invention recites, in part, ignoring (e.g., claim 16) and transmitting (e.g., claim 17) "proclaim" messages, as well as node and group connectivity messages. Claims 16 and 17 also recite, in part, the quiescent state as described above. The Office Action cited

Moiin (column 8, lines 25-47) as teaching these aspects. Applicants respectfully submit that a careful reading of Moiin revealed no teaching or suggestion of these types of messages or of a quiescent state, as claimed by applicants' invention. The "heartbeat" messages presented by Moiin are completely unrelated to those of the present application, since the former are not used for "liveness" purposes as in the latter. In addition, Moiin does not present join, death, or node reachability protocols.

Based on the foregoing, applicants respectfully submit that the pending claims patentably distinguish over Budde in combination with Fischer, Brown and/or Moiin, and that the various combinations alleged in the final Office Action do not render applicants' invention obvious. Reconsideration and withdrawal thereof are therefore requested.

In view of the above, allowance of all claims is respectfully requested. Should the Examiner wish to discuss this case with applicants' attorney, the Examiner is invited to contact applicants' attorney at the below-listed number.

Respectfully submitted,

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Dated: December 20 , 2002

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